

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A process for the contemporaneous preparation of middle distillates and a high boiling residue suitable for producing lubricating bases starting from a feedstock of a hydrocarbon mixture comprising a mix of prevalently at least 80% by weight linear paraffins paraffinic hydrocarbons obtained by means of a Fischer-Tropsch type synthesis process from hydrogen and carbon monoxide, comprising at least 30% of a high-boiling fraction with a distillation temperature higher than 360°C, comprising:

(i) at least one hydrocracking step, wherein said hydrocarbon mix is reacted with hydrogen at a temperature of between 200 and 450°C and a pressure of between 0.5 and 15 MPa, in the presence of a catalyst, for a time sufficient for converting at least 40% of said high-boiling fraction, into a fraction of hydrocarbons which can be distilled at temperatures lower than 360°C;

(ii) at least one distillation step of the product of step (i) for separating at least a fraction of middle distillate and at least one high-boiling residue suitable for producing a lubricating base with an initial boiling point equal to or higher than 340°C, wherein said hydrocracking step (i) is effected in the presence of a supported catalyst comprising:

(A) a support of an acidic nature consisting of a catalytically active porous solid, including silicon, aluminum, phosphorus and oxygen bonded to one another in such a way as to form a mixed amorphous solid forming a single phase, characterized by an Si/Al atomic ratio of between 15 and 250, a P/Al ratio of at least 0.1, but lower than 5, a total pore volume ranging from 0.5 to 2.0 ml/g, an average pore diameter ranging from 3 nm to 40 nm, and a specific surface area ranging from 200 to 1000 m²/g;

(B) at least one metal with a hydro-dehydrogenating activity selected from groups 6 to 10 of the periodic table of elements, dispersed on said support (A) in an amount of between 0.05 and 5% by weight with respect to the total weight of the catalyst.

Claim 2 (Original): The process according to claim 1, wherein said active support of the catalyst has a total pore volume of between 0.7 and 1.7 ml/g, a surface area of between 300 and 900 m²/g and an average pore diameter of between 5 and 30 nm, an Si/Al ratio ranging from 20 to 200 and a P/Al ratio ranging from 0.3 to 3.5.

Claim 3 (Previously presented): The process according to claim 1, wherein the difference between 10% and 90% in the distribution curve of the pore dimensions of said active support of the catalyst, is included within a diameter range of between 2 and 40 nm.

Claim 4 (Previously presented): The process according to claim 1, wherein said catalyst comprises, in addition to said active support (A) a binder consisting of an inert inorganic solid.

Claim 5 (Previously presented): The process according to claim 4, wherein said inert binder is selected from the group consisting of silica, alumina, clay, titanium oxide (TiO₂) or zirconium oxide (ZrO₂), boron oxide (B₂O₃) and mixtures thereof.

Claim 6 (Previously presented): The process according to claim 4, wherein said binder is in an amount of 1 to 70% by weight with respect to the weight of said inert binder and said amorphous support (A).

Claim 7 (Previously presented): The process according to claim 4, wherein said catalyst is in the form of pellets having dimensions of around 2-5 mm in diameter and 2-10 mm in length.

Claim 8 (Previously presented): The process according to claim 1, wherein said metal in component (B) of the catalyst is selected from the group consisting of nickel, molybdenum, tungsten, cobalt, platinum, palladium and mixtures thereof.

Claim 9 (Previously presented): The process according to claim 1, wherein the concentration of said metal having a hydro-dehydrogenating activity ranges from 0.2 to 1% by weight with respect to the total weight of said catalyst.

Claims 10 and 11 (Canceled).

Claim 12 (Previously presented): The process according to claim 1, wherein said feeding mix consists for at least 80% by weight of linear paraffins having from 5 to 80 carbon atoms and an initial boiling point of between 45 and 675°C (by extrapolation).

Claim 13 (Previously presented): The process according to claim 1, wherein said feeding mix comprises from 40 to 80% by weight of a high-boiling fraction which can be distilled at temperatures ≥ 360°C and from 20 to 60% by weight of middle distillate.

Claim 14 (Previously presented): The process according to claim 1, wherein said feeding mix has an initial boiling point of at least 260°C.

Claim 15 (Previously presented): The process according to claim 1, wherein said hydrocracking step (i) is run at a temperature of between 300 and 370°C and at a pressure of between 1 and 10 MPa, including the hydrogen pressure.

Claim 16 (Previously presented): The process according to claim 1, wherein said hydrocracking step (i) is effected with an initial (hydrogen) / (hydrocarbons) mass ratio of between 0.03 and 0.2.

Claim 17 (Previously presented): The process according to claim 1, wherein the α conversion in said hydrocracking step (i) ranges from 60 to 90%.

Claim 18 (Previously presented): The process according to claim 1, wherein an aliquot of said high-boiling residue obtained in said step (ii) is recycled to the hydrocracking step (i).

Claim 19 (Previously presented): The process according to claim 1, wherein said high-boiling residue used for the production of lubricating bases is subjected to a de-waxing treatment.

Claim 20 (Original): The process according to claim 19, wherein said dewaxing step consists of a catalytic dewaxing.

Claim 21 (Previously presented): The process according to claim 1, comprising, in addition, a hydrogenating treatment of the feed to said hydrocracking step (i).

Claim 22 (Previously presented): The process according to claim 1, wherein, before the hydrocracking step, a light fraction having a final boiling point lower than 380°C is separated from said feed, by distillation, before the hydrocracking step.

Claim 23 (Original): The process according to claim 22, wherein said light fraction is subjected to a hydroisomerization treatment in the presence of a suitable bi-functional catalyst with a hydro dehydrogenating activity to obtain an isomerized mix.

Claim 24 (Original): The process according to claim 23, wherein said light fraction is subjected to a hydrogenating treatment, before the hydro-isomerization treatment.

Claim 25 (Previously presented): The process according to claim 22, wherein said light fraction or a product obtained therefrom, is joined to at least a part of said fraction of middle distillate obtained in step (ii) and sent to a fractionation step for the production of at least one fraction of middle distillate.